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College Women's Knowledge and Understanding of Women Health Issues: A Descriptive Study

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COLLEGE WOMEN'S KNOWLEDGE AND UNDERSTANDING OF WOMEN HEALTH ISSUES: A DESCRIPTIVE STUDY

A Thesis Project Presented in Partial Fulfillment of the Requirements for the Degree Bachelor of Science with the Mahurin Honors College Graduate Distinction at Western Kentucky University

By

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ABSTRACT

Breast self-examinations, pap smears, Obstetrician and Gynecologist (OBGYN) visits, mammograms, and other preventative measures are all vital pieces of women's health that can help determine a variety of issues and illnesses (U.S. National Library of Medicine, 2020). Women are presumed to have acquired information on these issues through certain sources to guide them through their adult lives. Not every woman is familiar with, or follows, the recommended guidelines for breast self-examination or gynecological visits. According to the Centers for Disease Control and Prevention (CDC), about 94,000 U.S. women are diagnosed each year with some form of gynecologic cancer, which disproportionately affects underserved and minority populations (CDC, 2019b). If these women were aware of their risk had access to better health care, their cancer may have been prevented or detected earlier. The purpose of this study is to identify these factors influencing a woman's decision to seek preventative and regular health care.

The 33-question survey was developed to collect data and administered to female students enrolled in classes and student organizations at Western Kentucky University (WKU) during spring 2020 semester through Qualtrics, face-to-face classes and at various organizations' meetings. Results showed that socioeconomic and minority status as well as access to proper insurance coverage were all key variables. Most health information is learned from family members with some areas were also learned from doctors.

I dedicate this thesis to all young women out there who have ever been anxious, frightened and lonely while they fought through health concerns and illnesses no young woman should ever have to face. You had the courage to stay standing, and for that, I honor you.

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VITA

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INTRODUCTION

Breast self-examinations, pap smears, Obstetrician and Gynecologist (OBGYN) visits, mammograms, and other preventative measures are all vital pieces of women's health that can help determine a variety of issues and illnesses (U.S. National Library of Medicine, 2020). Women are presumed to have acquired information on these issues from their high school and college years to guide them through their adult lives and improve on their quality of life. Surprisingly, not every woman in America, or Kentucky, or even on college campuses is familiar with or follows the recommended guidelines for breast self-examination or gynecological visits. At some point, learning about these regular and preventative measures of healthcare becomes less significant and is forgotten.

According to the Centers for Disease Control and Prevention (CDC), approximately 94,000 U.S. women are diagnosed with some form of gynecologic cancer each year, which disproportionately affects underserved and minority populations (CDC, 2019b). If these women were aware of their risk for gynecologic cancer or had access to better health care, their cancer may have been prevented or detected earlier. The CDC concluded that increased knowledge and resources might be beneficial in reducing the amount of gynecologic cancer deaths (2019a). The methods, resources and knowledge for women to learn about their own health are available; however, certain barriers prevent certain women from accessing said resources.

According to Stark and Cimprich (2003), one of the most important components of women's health is "encouraging women to value themselves in order to care and self-nurture their body, mind and spirit" (p. 100). Without said encouragement and

empowerment from family members, health care professionals, health educators and the peers around them, women are unable to support themselves and their own personal health. With women responsible for numerous roles both in society and within their own personal lives, Stark and Cimprich express the importance of promoting attentional health to women (2003, p. 96). Health care professionals that practice diverting females' attention to focus on their own health "supports and empowers them to be active participants in their own health care" (Stark and Cimprich, 2003, p. 100). Women are only able to break down these health knowledge barriers when some of their attention can be specifically aimed at their own personal health. They may be unable to place an emphasis on health due to a variety of obstacles or circumstances surrounding their lives.

Discrepancies exist as to when women learn about their own bodies; this could be based on a number of factors: familial relations, level of education, health education knowledge/exposure from school, socioeconomic status as it relates to healthcare, and many more. These factors play a part in a woman's decision to visit doctors, make appointments with their OBGYN, and even practice these skills at home. Vital recommendations for prevention include early detection, and or treatment, of many illnesses and diseases. The purpose of this study is to identify factors influencing a woman's decision to seek preventative and regular health care.

The impact of these factors may facilitate or prevent women from accessing prevention and early detection strategies, which may impact their lives negatively with prior conditions, ailments, illness and disease.

LITERATURE REVIEW

A variety of research has been conducted on women's health, preventative health, and at-risk female populations. However, few have focused specifically on collegiate women and or their previous knowledge on women health issues.

With accurate medical information and reliable preventative care typically only provided by licensed medical professionals, having the ability to attain consistent and regular health care from said professionals is crucial in maintaining good health. According to a study conducted by Cornelius, Smith and Simpson (2002), women of color face a number of limiting factors when it comes to obtaining access to preventative health measures. The study was based on data collected in 1994 and the researches highlighted race and ethnicity, location, insurance status, income level, education level, perceived health, regular doctor and receipt of preventative care. The study concluded that "women of color who had a regular doctor were at least twice as likely as those who did not to receive preventative care" (Cornelius, Smith & Simpson, 2002, p. 536). Women who visited their doctors regularly did not view perceived discrimination as a factor influencing their access to preventative care. It also determined that access to a consistent health care provider is key in addressing preventative health measures for women of color.

A number of research studies have been conducted on the lack of and/or differing education surrounding breast cancer. While none of these studies cover widespread women's health topics and education, the studies on breast cancer and breast education found similar variables relating to socioeconomic status affecting how a woman

approaches her own health care. According to Sunders-Goldson (2018), primary care providers and physicians in indigenous areas cannot provide accurate breast cancer risk assessment (BCRA) to females due to "barriers such as time, training, comfort, knowledge and resources" (p. 106). This study corroborates that not only does socioeconomic status affect a woman's ability to acquire knowledge and treatment on women health issues; socioeconomic situation of the woman's primary care doctor can also factor into the patient's services. BCRA and other risk assessments are crucial to a woman's medical history and future medical treatment. The basic premise of BCRA is family history research and use of the Gail Model, a mathematical model that determines risk of breast cancer based on a number of factors (Sunders-Goldson, 2018, p. 110). According to Sunders-Goldson (2018), a web-based educational intervention delivered to primary care residents (medical students) discussing multiple BCRA resources like family history and the Gail Model proved to be effective and "the knowledge of the primary care residents significantly improved" (p. 110). This further proves that there are limiting factors and barriers to women receiving full knowledge of their health risks. Proper health education provided to physicians allowed for better care of the woman, both through the physician and through their own personal care (Sunders-Goldson, 2018, p. 110).

While the study completed by Sunders-Goldson in 2018 corroborates socioeconomic status as a proven factor in breast education and other women's health topics, there are other elements that could be at play in a woman's choice to seek preventative care and health education, such as cultural influences. In an Iranian study of women at risk of breast cancer, researchers individually interviewed women diagnosed

with breast cancer, at-risk women, and health care professionals in the field about why certain women were desiring preemptive and early detection testing. According to Lamyian (2016), "unfavorable/favorable perspectives among women towards breast cancer were found to be their perception of their own situation, personal self-efficacy, and their religious beliefs" (p. 410). The study evaluated females who were seeking these early detection methods, determining that the ultimate influential factor that led them to carry out these measures was their religious beliefs. The Persuasion Based Health Monitoring (PBHM) Model utilized this influential factor to motivate females to implement the early detection methods in their own cases, and Lamyian believes it would be an effective educational model in culturally similar countries to Iran.

Socioeconomic discrepancies can play a part in an individual woman seeking out proper health care, but the systematic economic differences from a developed country, such as the United States, to a developing country can also change how women's health care is approached on a larger scale. According to Anyanwu (2016), developing countries most often produce more cases of advanced breast cancer due to the socioeconomic, cultural and political factors at play in addition to females' "misconceptions and unfounded beliefs" (p. 767). Rather than mammograms and other screening measures, the World Health Organization and Breast Health Global Initiative recommend self-breast exams nearly exclusively in developing countries due to their lack of resources (Anyanwu, 2016, p. 767). The researchers surveyed nearly 500 women, primarily in the ages 20-39, at an urban Nigerian hospital. The questions related to their perceptions of potentially missed opportunities health providers had to educate them with breast awareness information. The most likely groups to report missed opportunities for breast

awareness education were females who had earned primary school education or less and females whose monthly family income was less than $122.70 (Anyanwu, 2016, p. 766-767). The study continues to reinforce that socioeconomic factors, in addition to education level, correlate directly with how much knowledge a female acquires regarding health topics.

Finally, the amount and/or lack of insurance coverage a woman acquires from her employment or other sources can greatly affect the amount and quality of health care, specifically preventative care which she could receive or afford. A 2018 study conducted by the Kaiser Family Foundation (KFF) found 60% of women ages 19-64 had employer sponsored insurance, 8% had coverage via direct purchase, 17% was provided by Medicaid, 3% was provided in another form and 11% were completely uninsured (KFF, 2020). Ethnic minority women, non-citizen women and women with lower incomes are more like to be uninsured than other groups (KFF, 2020). According the KFF (2020), "uninsured women often have inadequate access to care, receive a lower standard of care when they are in the health system, and have poorer health outcomes" (2020). The coverage of regular health insurance, regardless of how it is provided, is crucial in females receiving preventative, primary and specialty services (KFF, 2020). While uninsured numbers have been decreasing in recent years, significant progress is yet to be made on ensuring all females have proper access to all types of health coverage.

As it relates to breast cancer, specifically, the amount of health coverage mandated is outlined by the United States Preventative Services Task Force (USPSTF) and the Health Resources and Services Administration (HRSA). All insurance plans, both private groups and individual as well as state Medicaid, must cover the expenses of

regular mammography screening, genetic testing for those with a family history of breast cancer and preventative medication (KFF, 2019). Not only does the expense coverage of these programs allow women more freedom with maintaining their regular, recommended health care services, but it also improves their personal health by doing so. Certain medical professionals may recommend other types of services and preventative measures; however, these do not have to be covered by insurance according to the American Care Act (KFF, 2019).

METHODOLOGY

The purpose of this study was to identify factors influencing a woman's decision to seek preventative and regular health care in addition to how they acquired knowledge about said health care.

A 33-question survey was developed to collect data for the study. The survey gathered demographic and background information in addition to determining the knowledge and understanding of participants on various women's health issues and statements. The survey elaborated on participants' perceived knowledge, how they acquired said knowledge and if they acted on it in appropriate and timely manner with screening and health care visits. Multiple drafts of the survey were developed prior to the final copy that was submitted to the Western Kentucky University (WKU) Institutional Review Board (IRB). The final survey, approved by the IRB was distributed to female students as outlined in appendix A.

The 13 topics covered in the questionnaire include self-breast exams, mammogram, cervical cancer screenings, pap smears, contraceptives, menopause, women and heart disease, sexually transmitted infection (STI) screenings, bone density testing, pregnancy and child birth were chosen in partnership with the committee and from the literature. It is a condensed version of the topics found under the Women's Health encyclopedia search of the U.S. National Library of Medicine (2020).

In total, 380 responses were recorded from female students enrolled at Western Kentucky University (WKU) between January 28 and March 9, 2020. The 33-question Qualtrics survey was distributed via direct link to female students through professors'

Blackboard announcements and email lists, in addition to text messages and GroupMe messages. Four Student Registered Organizations (SROs) on campus allowed presentations and distribution of the survey to their members via link as well. Each SRO President signed a consent form with the understanding that the presentation could be stopped at any time and their members were not required to take the survey. (Appendix B). Approximately 800 women had access to the survey and all 380 respondents completed the survey on their own time and electronic devices via direct link.

Nearly 97% of respondents were ages 18-22, the typical age range for a traditional college student. All but three respondents were domestic students, and 93.6% described themselves as white. In the analysis of the survey results, frequencies, percentages, mean, standard deviation were used to describe the data.

RESULTS

When the subjects self-evaluated their perceived knowledge of 10 different women's health topics on a scale of 1-5 with 5 "being an expert on the topic", on average, every topic was scored lower than three except contraceptives (3.69) and pregnancy and childbirth (3.33). This demonstrates that, on average, college-aged females know less than the median score of three in eight of the 10 topics. Collectively across all 10 topics, the respondents, on average, would score themselves a 26.14 out of 50 on the scale. The topic with the lowest standard deviation (0.97) and variance (0.94) was bone density testing where the mean score was 1.64 out of 5. The topic with the highest standard deviation (1.39) and variance (1.92) was pap smears in which the mean score was 2.60 out of 5 (Table 1).

Table 1 – Familiarity/Knowledge of Women's Health Data

Topic (field)	N	Mean	SD
Self-breast exams	335	2.78	1.22
Mammogram	333	2.50	1.18
Cervical cancer screenings	335	2.14	1.20
Pap smears	334	2.60	1.39
Contraceptives	336	3.69	1.22
Menopause	332	2.75	1.17
Women and heart disease	334	2.19	1.11
STI screenings	335	2.52	1.30
Bone density testing	335	1.64	0.97
Pregnancy and child birth	334	3.33	1.06

Approximately 93.6% of respondents defined themselves as white, leaving 6.4% in minority racial/ethnic populations, with 3.3% being black. In 9 of the 10 health topics, the black respondents had a higher score than the defined mean. However, all other minority groups scored themselves below average in at least 5 of the 10 topics with the Asian demographic scoring below average in seven topics (Table 2).

Table 2: Demographic and Background Information

Item	N (%)
Age	
18-22	348 (96.9)
23-25	5 (1.4)
26+	6 (1.7)
Student Classification	
Freshman	65 (18.2)
Sophomore	84 (23.5)
Junior	109 (30.4)
Senior	91 (25.4)
Graduate	1 (0.3)
Other	
Ethnicity	
White	336 (93.6)
Black or African American	12 (3.3)
Hispanic	6 (1.7)
Native American or American Indian	1 (0.3)
Asian	4 (1.1)
Student Status	
Domestic	343 (99.1)
International	3 (0.9)
Marital Status	
Married	354 (99.2)
Single	3 (0.8)
Parental Household	
Two parents	297 (83.4)

Single parent	44 (12.4)
Other	15 (4.2)
Female Siblings	
Yes	218 (61.6)
No	136 (38.4)
Employment	
Yes	234 (65.5)
No	123 (34.5)

N = 381; Missing = 22 - 35

Throughout the survey, respondents indicated that they primarily learned their women's health knowledge through family. Over 65% of females indicated family as one of the sources by which they learned about the identified areas of women's health followed by high school education. The recommendation of when to first visit an OBGYN, the timing of menopause and what a mammogram is were also all learned from family, mostly.

When evaluating their personal knowledge on the identified areas of women's health, at large, 51.1% of the respondents attributed more than one source (family, college education, high school education, doctors). However, when answering questions regarding how they learned about each of the areas or statements, the majority indicated they learned the information from one source at a time. Some individual topics had the sources listed previously as options in addition to high school medical class and specified doctor as primary care doctor and/or OBGYN. College women's knowledge of an OBGYN timing recommendation made by the Mayo Clinic and 73.5% indicated they learned it from one source. The timing of menopause (77.5%) and the act of a mammogram (71.0%) were also overwhelmingly attributed to one source of learning.

The 10 topics/health areas identified to be important, the OBYGN recommendation, the timing of menopause and the act of a mammogram were primarily attributed to family, both as a single source and in combination with others.

Knowledge of how to perform a self-breast exam was widely learned by respondents at the OBGYN office, both as a single source and in combination with others. Over 73% of respondents said they learned how to perform a self-breast exam via only one source. Women learned about the HPV vaccine via a primary care doctor while learning the warning signs of breast cancer were attributed to "other" when one source was designated and family when multiple sources were designated which was 43.9% of the time (Table 3).

Table 3: Knowledge and Skills

Item	N (%)
General Knowledge Learned	
College Education	85 (25.4)
Family	219 (65.6)
High School Education	100 (29.9)
Doctors	150 (44.9)
Other	43 (12.9)
OBGYN Recommendations	
Yes	253 (80.3)
No	62 (19.7)
OBGYN Recommendation Learned	
Family member	161 (64.7)
High school health or medical class	45 (18.1)
Primary care doctor	76 (30.5)
Other	28 (11.2)
Self-Breast Exam	
Yes	153 (47.1)
No	172 (52.9)

Self-Breast Exam Learned	
Family member	56 (40.9)
High school health or medical class	35 (25.5)
OBGYN	58 (42.3)
Primary care doctor	45 (32.8)
Other	26 (19.0)
Warning signs of breast cancer	
Yes	134 (43.2)
No	176 (56.8)
Warning signs confirmation	
Difference in size from one to other	95 (72.0)
Itchiness	66 (50.0)
Lumps	131 (99.2)
Redness	70 (53.0)
Warning signs learned	
Family member	60 (45.5)
High school health or medical class	49 (37.1)
OBGYN	42 (31.8)
Primary care doctor	42 (31.8)
Other	34 (25.8)
Human Papilloma Virus (HPV) Vaccine	
Yes	224 (70.9)
No	92 (29.1)
HPV Learned	
Family member	37 (17.2)
High school health class	27 (12.6)
High school medical class	7 (3.3)
OBGYN	28 (13.1)
Primary care doctor	102 (47.7)
Other	13 (6.1)
HPV Received	
Yes	186 (59.0)
No	44 (14.0)
I don’t know	85 (27.0)
Menopause	
Yes	238 (75.8)

No	76 (24.2)
Menopause Learned	
Family member	160 (69.3)
High school health or medical class	71 (30.7)
OBGYN	15 (6.5)
Primary care doctor	17 (7.4)
Other	37 (16.0)
Mammogram	
Yes	134 (42.8)
No	179 (57.2)
Mammogram Learned	
Family member	85 (64.9)
High school health or medical class	31 (23.6)
OBGYN	34 (26.0)
Primary care doctor	31 (23.7)
Other	17 (13.0)

N = 381; Missing = 47-250

In terms of access to proper healthcare, 1.2% of respondents reported not having health insurance growing up, 2.1% indicated they did not visit a primary care doctor growing up, and 38.4% did not visit the OBGYN at the recommended time per the Mayo Clinic (2017). When questioned about how they attained their general knowledge, both those without health insurance and a primary care doctor had an almost even distribution of methods selected, with the doctor being the most popular. Those who had not visited the OBGYN at the recommended time attributed most of their general knowledge to family. When it came to understanding of the OBGYN recommendation and knowing how to perform self-breast exam, respondents indicated the primary source of knowledge across all three healthcare access points (insurance, primary care doctor, OBGYN) was family. For respondents that did not visit the OBGYN at the appropriate time, 48.6%

denoted they learned how to perform a self-breast exam from family while 42.3% of all respondents indicated the OBGYN was at least one source in which they learned the preventative measure.

All respondents who did not have access to a primary care doctor and/or health insurance and the majority of those who did not visit the OBGYN at the recommended time indicated they did not know the warning signs of breast cancer. However, respondents who did not have appropriate relations with the three healthcare access points primarily indicated they did understand what the HPV vaccine and menopause were. They attributed various sources for knowledge of the HPV vaccine, but indicated they primarily learned what menopause was from family members. Out of the 119 respondents that indicated they did not visit the OBGYN at the recommended time, 68% did not know when a woman was supposed to receive her first mammogram, a topic that 64.9% of all respondents attributed to learning from family members (Table 4).

Table 4: Access and Practices

Item	N (%)
Health Insurance	
Yes	329 (98.8)
No	4 (1.2)
Primary Doctor	
Yes	324 (97.9)
No	7 (2.1)
OBGYN	
Yes	199 (61.6)
No	124 (38.4)

N = 381; Missing = 48-58

DISCUSSIONS AND CONCLUSIONS

College women are operating with below average knowledge in 8 of the 10 critical women's health areas. Most college women learn about women's health issues from a single source, and more commonly than not, that source is their family.

When the lack of health care access exists, the communication and exchange of knowledge with family members become a crucial and necessary aspect of women's health education. The data showed that when women did not have proper resources to regular and preventative health care, they made up for that lack of health education through family. Even women emerging from households with no female siblings or just one parent, regardless of which parent, indicated that they are gathering most of their health knowledge from their family.

When health care access does exist for individuals, whether it be primary care doctor visits, proper health insurance coverage, or necessary visits with an OBGYN, family is still the primary avenue of education for females. Whether it be parents, siblings or some other family member, the family portion of health education causes a chain reaction to receive regular health care. As shown in the data, most general knowledge was attributed to education by family members, but self-breast exams, along with a handful of other topics, were primarily learned through the OBGYN or primary care doctor. It is likely that female students have access to and visit an OBGYN and/or their primary care doctor due to family influence in the matter. This study aligns with the KFF study in 2018, suggesting that women who lack health insurance often receive poorer

care and education within the healthcare system and have worse outcomes than the insured (2020).

LIMITATIONS

One flaw within this study is the lack of uninsured and underserved women. This is primarily due to the limits and demographics that are correlated with a college-enrolled woman and the convenience sample that the data was gathered within. People who enroll in college are more likely to have had the financial means to attain health insurance and access to regular and/or preventative health care due to socioeconomic status. If the study had been expanded to all women across Warren County, ages 18-24, rather than women enrolled at WKU, access to healthcare may have been more varied, therefore expanding and solidifying the conclusion that lack of healthcare leads to worse health education and more reliance on families to educate.

Another limitation was the lack of minorities and women of color represented. In the Fall of 2019, 15.9% of enrolled students were underrepresented minorities, including students that selected Black, Hispanic, Native American, Pacific Islander or Two or More Races (WKU, 2019). The 6.4% of respondents representing the non-white female population does not adequately represent the non-white population enrolled at WKU during the study period. The convenience sample taken of students enrolled at WKU limits the minority demographic available to this study. The study performed by Cornelius, Smith and Simpson in 2002 provides evidence to the fact that women of color struggle to attain regular medical coverage. If there was a higher population of minorities and women of color at WKU and in the study, the lack of regular medical care seen in women of color may have been caused a wider array of knowledge of health in the data.

IMPLICATIONS AND FUTURE RESEARCH

While families are currently the primary source of education for much of women's health topics, this should be an area to be expanded on. Due to the wide array of familial/household types and relationships that exist in this day and age, the burden to educate women about health topics that will affect them positively and negatively for the remainder of their lives should not solely be placed on the family. Health education must increase in high school health classrooms and college curricula. Conversations about health between families and their adolescent women need to be expanded and become more regular. Primary care doctors and OBGYNs must keep the line of communication open with their patients, while also giving parents and other family members the tools to support conversations and education in the home, without violating the Health Insurance Portability and Accountability Act (HIPAA). Health education must increase across all sources, in conjunction with one another, in order for women to gain the proper skills and knowledge to care for themselves, and seek care when necessary, in the many years of their lives to come.

A future point of research may be to gather similar data with an older population of females in order to determine if age and life experience may factor into knowledge of women's health topics. It is likely that with experience, age and more exposure to a variety of health topics and health care, a woman's knowledge of women's health issues would expand.

REFERENCES

Anyanwu, L.-J. C., Anyanwu, O. M., & Yakubu, A. A. (2016). Missed opportunities for breast awareness information among women attending the maternal and child health services of an urban tertiary hospital in Northern Nigeria. Journal of Cancer Research & Therapeutics, 12(2), 765–769. https://doi-org.libsrv.wku.edu/10.4103/0973-1482.163791

Centers for Disease Control and Prevention. (2019a, August 7). *What can I do to reduce my risk?* Gynecologic Cancers. https://www.cdc.gov/cancer/gynecologic/basic_info/prevention.htm

Centers for Disease Control and Prevention. (2019b, September 13). *Gynecologic cancer incidence, United States – 2012-2016.* United States Cancer Statistics (USCS). https://www.cdc.gov/cancer/uscs/about/data-briefs/no11-gynecologic-cancer-incidence-UnitedStates-2012-2016.htm

Cornelius, L. J., Smith, P. L., & Simpson, G. M. (2002). What factors hinder women of color from obtaining preventive health care? American Journal of Public Health, 92(4), 535–539. https://doi-org.libsrv.wku.edu/10.2105/AJPH.92.4.535

Lamyian, M. (2016). Improving early detection behavior in women at risk of breast cancer: persuasion-based health monitoring model. Climacteric, 19(4), 409–410. https://doi-org.libsrv.wku.edu/10.1080/13697137.2016.1193138

Kaiser Family Foundation. (2020, January 24). *Women's health insurance coverage.* https://www.kff.org/womens-health-policy/fact-sheet/womens-health-insurance-coverage-fact-sheet/

Kaiser Family Foundation. (2019, September 26). *Coverage of breast cancer screening and prevention services.* https://www.kff.org/womens-health-policy/fact-sheet/coverage-of-breast-cancer-screening-and-prevention-services/

Mayo Clinic. (2017, May 23). *When should a female start seeing a gynecologist?* https://www.mayoclinichealthsystem.org/hometown-health/speaking-of-health/when-should-a-female-start-seeing-a-gynecologist

Saunders-Goldson, S. (2018). A web-based education intervention on breast cancer risk assessment of indigent women in primary care. ABNF Journal, 29(4), 106–111.

Stark, M. A., & Cimprich, B. (2003). Promoting attentional health: Importance to women's lives. Health Care for Women International, 24(2), 93. https://doi-org.libsrv.wku.edu/10.1080/07399330304012

U.S. National Library of Medicine. (2020, March 4). *Women's health.* MedlinePlus. https://medlineplus.gov/ency/article/007458.htm

Western Kentucky University, Office of Institutional Research. (2019). *WKU Enrollment Report, Fall 2019.*

APPENDICES

Appendix A – Survey

1. Informed consent document
2. How old are you?
    a. 18-22
    b. 23-25
    c. 26+
3. How would you describe yourself?
    a. White
    b. Black or African American
    c. Native American or American Indian
    d. Hawaiian or Pacific Islander
    e. Hispanic
    f. Asian
4. What is your current designation?
    a. Domestic student
    b. International student, if so enter your country of origin
5. What is your marital status?
    a. Single
    b. Married
    c. Divorced
6. What household did you grow up in?

a. 2 parents

b. Single parent

c. Other, if so please specify

7. Which parent?

a. Father

b. Mother

8. Do you have any female siblings?

a. Yes

b. No

9. Older or younger?

a. Older

b. Younger

c. Older and younger

10. What is your class level?

a. Freshman

b. Sophomore

c. Junior

d. Senior

e. Graduate

f. Other

11. Are you employed?

a. Yes

b. No

12. Indicate your work status
    a. Full-time
    b. Part-time
13. How would you rate your familiarity/knowledge of these women's health topics/preventative measures? (Scale of 1-5 with 5 being an expert on the topic)
    a. Self-breast exams, mammogram, cervical cancer screenings, pap smears, contraceptives, menopause, women and heart disease, STI screenings, bone density testing, pregnancy and child birth
14. Where do you feel that you learned the majority of this understanding/knowledge? (Check all that apply)
    a. Family
    b. Doctors
    c. High school education
    d. College education
    e. Other
15. Did you visit a primary doctor growing up?
    a. Yes
    b. No
16. Did you have health insurance coverage growing up?
    a. Yes
    b. No
17. The Mayo Clinic recommends females first visit the Obstetrician/Gynecologist (OBGYN) between the ages of 18 and 21 unless other concerns about sexual

activity or reproductive health are presented (Mayo Clinic 2017). Did you know this?

a. Yes
b. No

18. If yes, where did you learn this? Check all that apply

a. High school health class
b. High school medical class
c. Primary care doctor
d. Family member
e. Other

19. Did you visit an Obstetrician/Gynecologist (OBGYN) at said time?

a. Yes
b. No

20. Do you know how to perform a self-breast exam?

a. Yes
b. No

21. If yes, where did you learn this? Check all that apply

a. High school health class
b. High school medical class
c. Primary care doctor
d. OBGYN
e. Family member
f. Other

22. Do you know the warning signs of breast cancer?

    a. Yes

    b. No

23. If yes, check all that you know

    a. Redness

    b. Itchiness

    c. Lumps

    d. Difference in size from one to other

24. Where/who did you learn these signs from? Check all that apply.

    a. High school health class

    b. High school medical class

    c. Primary care doctor

    d. OBGYN

    e. Family member

    f. Other

25. Do you know what the Human Papilloma Virus (HPV) vaccine is?

    a. Yes

    b. No

26. If yes, where did you learn this from?

    a. High school health class

    b. High school medical class

    c. Primary care doctor

    d. OBGYN

e. Family member

f. Other

27. Did you get the HPV vaccine?

a. Yes

b. No

c. I don't know

28. If yes, why did you get it?

29. If no, what are your reasons for not getting it?

30. Do you know approximately when menopause begins?

a. Yes

b. No

31. If yes, where did you learn this? Check all that apply.

a. High school health class

b. High school medical class

c. Primary care doctor

d. OBGYN

e. Family member

f. Other

32. Do you know approximately when a woman gets her first mammogram?

a. Yes

b. No

33. If yes, where did you learn this? Check all that apply.

a. High school health class

b. High school medical class

c. Primary care doctor

d. OBGYN

e. Family member

f. Other

Appendix B – SRO Approval Form

College Women's Knowledge and Perceptions about Women's Health Issues

Student Registered Organization (SRO) Letter of Cooperation

I, _____, President (or advisor) of _____, hereby give permission to Dana Brown to present information about her thesis and subject of study. She may also distribute her survey as needed to the members of my organization. We understand that in no way must we participate in this presentation or survey, and that we may deny access to our meetings or stop the presentation/distribution of the survey at any point in time.

Signature: _____ Date: _____

Omega Phi Alpha – Consent form signed by President Ashley Salmon, February 17, 2020

Alpha Gamma Delta – Consent form signed by President Haley Roedder, February 23, 2020

Kappa Delta – Consent form signed by President Emily Tinsley, February 23, 2020

Chi Omega – Consent form signed by President Caroline Singleton, March 2, 2020